

**REMARKS**

**Summary of the Office Action**

The drawings stand objected to because FIG. 3 should be designated by a legend such as “Prior Art.”

The title stands objected to for not being descriptive.

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Song (U.S. Patent No. 6,091,464) in view Kwak (U.S. Patent No. 6,384,878 B1).

Claims 5-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Song in view of Kawano et al. (U.S. Patent No. 5,677,745) in further view of Park et al. (U.S. Patent No. 6,411,347 B1) and Kwak.

Claims 10-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Song, Kwak, and Kawano et al.

**Summary of the Response to the Office Action**

Applicants submit concurrently herewith a Request for Approval of Drawing Change to label FIG. 3 as “Related Art.”

Applicants have amended the title of the invention as suggested by the Examiner.

Claim 19 has been amended as suggested by the Examiner to correct a minor informality.

Accordingly, claims 1-20 are presently pending for consideration.

**A Certified Copy of the Priority Document was Provide with the Filing**

Applicants respectfully submit that the certified copy of the priority document was provided with the filing of this application. Both the Application Transmittal and a post card receipt for the filing of the application indicate that a certified copy of the priority document was filed. Accordingly, Applicants respectfully request acknowledgement that the certified copy was filed upon the filing of the application.

**The Title Does Not Contain Objectionable Subject Matter**

The title stands objected to as not being descriptive. Applicants have amended the title as suggested by the Examiner. Accordingly, Applicants respectfully request that the objection to the title be withdrawn.

**The Drawings Do Not Contain Objectionable Subject Matter**

The drawings stand objected to because Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. The drawing has been amended, as indicated in the Request for Approval of Drawing Change filed concurrently herewith, by adding the legend "Related Art" to FIG 3. Applicants respectfully submit that the legend of "Related Art" is appropriate for designating that what is illustrated in FIG. 3 is old. In addition, the designation of FIG. 3 as "Related Art" is consistent with the "Related Art" designations of FIGs. 1 and 2. Accordingly, Applicants respectfully request that the objection to the drawings be withdrawn.

**All Claims Define Allowable Subject Matter**

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Song (U.S. Patent No. 6,091,464) in view Kwak (U.S. Patent No. 6,384,878 B1). Applicants respectfully submit that the 35 U.S.C. § 103(a) rejection of claims 1-4 should be withdrawn since neither Song nor Kwak teaches or suggests, either separately or in combination, all of the features recited in claim 1. For example, claim 1 recites, amongst other features, substantially bilaterally symmetric pixel electrodes in the pixel areas. The Office Action states that “Song does not appear to have substantially bilaterally symmetric pixel electrodes.” To overcome the deficiencies of Song, the Office Action further states that “Kwak does have substantially bilaterally symmetric pixel electrodes as shown in Kwak (sic) Figure 10.”

Applicants respectfully submit that Kwak does not have substantially bilaterally symmetric pixel electrodes. In FIG. 10 of Kwak, the pixel electrode 500, which overlies adjacent gate lines 100, has a top relief from the top gate line and a bottom relief from the bottom gate line. As can be clearly seen in FIG. 10 of Kwak, the side of the top relief in the pixel electrode 500, which is adjacent to the contact C1 to the drain electrode 200 that must be overlapped by the pixel electrode, is a minimum design rule distance from the top gate line 100. On the other hand, the side of the bottom relief is at least twice the minimum design rule distance plus the width of the data line 200 from the bottom gate line 100. In other words, the bottom relief is more than twice as deep in comparison to the top relief such that the protrusion from the data line 200 can connect to the source 210 of the TFT for the pixel area. Applicants respectfully submit that Kwak does not teach or suggest substantially bilaterally symmetric pixel

electrodes. Thus, Applicants respectfully assert that Kwak and Song, either separately or in combination, do not teach or suggest, substantially bilaterally symmetric pixel electrodes, as recited in claims 1-4. In addition, Applicants respectfully assert that dependent claim 2-4 are allowable at least because of their dependencies on claim 1 and for the additional features that claims 2-4 recite. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 1-4 be withdrawn.

Claims 5-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Song in view of Kawano et al. (U.S. Patent No. 5,677,745) in further view of Park et al. (U.S. Patent No. 6,411,347 B1) and Kwak. Applicants respectfully submit that the 35 U.S.C. § 103(a) rejection of claims 5-9 should be withdrawn since neither Song, Kawano et al., Park et al. nor Kwak teach or suggest, either separately or in combination, all of the features recited in claim 5. For example, claim 5 recites, amongst other features, that each of the pixel areas includes a pair of a first projection and a second projection projecting from an adjacent scan line at one side. The Office Action refers to FIG. 11 of Kawano et al. with regard to a teaching of a first projection and second projection.

Applicants respectfully assert that Kawano et al. does not teach or suggest a pair of a first projection and a second projection projecting from an adjacent scan line at one side in a pixel area. Each of the pixel areas of Kawano et al. only have one projection from a scan line. Further, Applicants submit that neither Song, Park et al. nor Kwak teach or suggest a pair of a first projection and a second projection projecting from an adjacent scan line at one side in a pixel area. Thus, Applicants respectfully assert that Song, Park et al. and Kawano et al. do not

teach or suggest, either separately or in combination, a pair of a first projection and a second projection projecting from an adjacent scan line at one side in a pixel area, as recited in claims 5-9. In addition, Applicants respectfully assert that dependent claim 6-9 are allowable at least because of their dependence on claim 5 and for the additional features that claims 6-9 recite. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 5-9 be withdrawn.

Claims 10-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Song, Kwak, and Kawano et al. Applicants respectfully submit that the 35 U.S.C. § 103(a) rejection of claims 10-20 should be withdrawn since neither Song, Kwak nor Kawano et al. teaches or suggests, either separately or in combination, all of the features recited in claim 10. For example, claim 10 recites, amongst other features, a pixel electrode having a pattern configured to yield substantially the same capacitance value for capacitors that are formed between the pixel electrode and the adjacent data line on one side and between the pixel electrode and the adjacent data line on another side. The Office Action states “Concerning the pixel electrode pattern with the ability to yield substantially the same capacitance, Kwak has such a pixel pattern for the purpose of controlling electrostatic discharge and for controlling the ratio of storage capacitance to dummy storage capacitance [Figure 10 and Column 6, Lines 56-64].”

Applicants respectfully submit that the teaching for setting the ratio of a dummy capacitor to a storage capacitor of a pixel electrode in Kwak is completely non-analogous to a pixel electrode having a pattern configured to yield substantially the same capacitance value for capacitors that are formed between the pixel electrode and the adjacent data line on one side and

between the pixel electrode and the adjacent data line on another side. Applicants also respectfully submit that Kwak does not have any disclosure with regard to any capacitors formed between a pixel electrode and an adjacent data line. Since Kwak has no disclosure with regard to capacitances between a pixel electrode and adjacent data lines, Kwak can not provide any teaching or motivation with regard to a pixel electrode having a pattern configured to yield substantially the same capacitance value for capacitors that are formed between the pixel electrode and the adjacent data line on one side and between the pixel electrode and the adjacent data line on another side. Further, Applicants respectfully submit that neither Song nor Kawano et al. teaches or suggests a pixel electrode having a pattern configured to yield substantially the same capacitance value for capacitors that are formed between the pixel electrode and the adjacent data line on one side and between the pixel electrode and the adjacent data line on another side. Thus, Applicants respectfully assert that Song, Kwak and Kawano et al. do not teach or suggest, either separately or in combination, a pixel electrode having a pattern configured to yield substantially the same capacitance value for capacitors that are formed between the pixel electrode and the adjacent data line on one side and between the pixel electrode and the adjacent data line on another side, as recited in claims 10-20. In addition, Applicants respectfully assert that dependent claim 11-20 are allowable at least because of their dependencies on claim 10 and for the additional features that claims 11-20 recite. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 10-20 be withdrawn.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached pages are captioned "Version with markings to show changes made."

### CONCLUSION

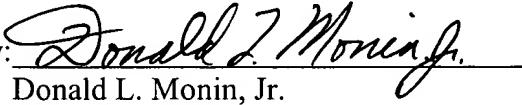
In view of the foregoing, Applicants respectfully request reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicants undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

**MORGAN, LEWIS & BOCKIUS LLP**

Dated: January 28, 2003

By:   
Donald L. Monin, Jr.  
Reg. No. 47,256

Customer No.: 009629

**MORGAN, LEWIS & BOCKIUS LLP**  
1111 Pennsylvania Avenue, N.W.  
Washington, D.C. 20004  
Telephone: 202-739-3000  
Facsimile: 202-739-3001

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE DRAWINGS:**

The drawings have been amended as indicated in the Request for Approval of Drawing Change filed with the current amendment.

**IN THE TITLE:**

The title has been amended to read as follows:

--LIQUID CRYSTAL DISPLAY DEVICE **WITH SUBSTANTIALLY BILATERALLY SYMMETRIC PIXEL ELECTRODES**--

**IN THE CLAIMS:**

Claim 19 has been amended as follows:

19. (Amended) The TFT substrate according to claim 10, wherein each pixel area has spaces between the pixel electrode and adjacent data lines, and the area of the space between the pixel electrode and one of the adjacent data lines is substantially the same as the area of the space between the pixel electrode and another one of the adjacent [date] **data** lines.



FIG. 2  
Related Art

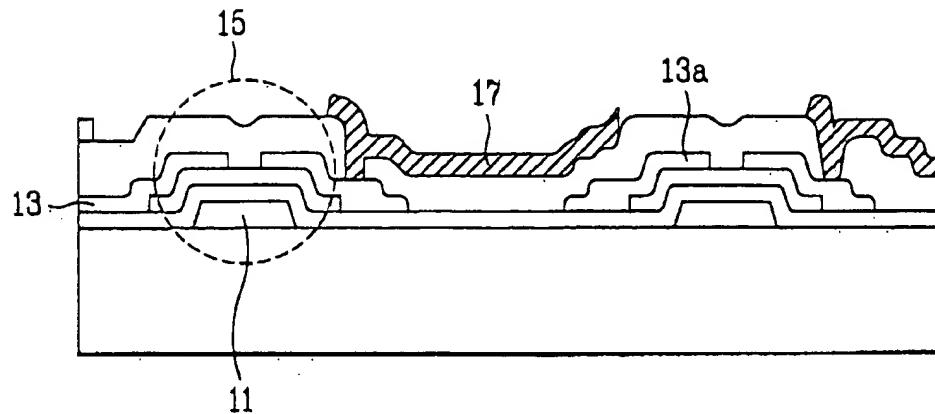


FIG. 3  
Related Art

